

Docket No. 44084-326

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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Eiichi YOSHIDA, et al.

Serial No.: 09/161,277

Filed: September 28, 1998

Group Art Unit: 2624

Examiner: Tran, D.

For: IMAGE FORMING APPARATUS AND TERMINAL DEVICE CONNECTED TO  
NETWORK

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**BRIEF ON APPEAL**

Honorable Commissioner of  
Patents and Trademarks  
Washington, D. C. 20231

Sir:

This Brief is submitted pursuant to the appeal of the final rejection of claims 1-6, 9-13, 15  
and 16 dated July 30, 2001.

**REAL PARTY IN INTEREST**

**MINOLTA CO., LTD.**, is the real party in interest in the pending application.

**RELATED APPEALS AND INTERFERENCES**

No other appeal or interference is known to Appellants which will affect or be directly  
affected by or have a bearing on the Board's decision in the pending appeal.

### STATUS OF CLAIMS

Claims 1-6, 9-13, 15 and 16 are pending in this application. Claims 1-6, 9-13, 15 and 16 stand under final rejection, from which rejection of claims 1-6, 9-13, 15 and 16 this appeal is taken. No other claims are pending.

### STATUS OF AMENDMENTS

No amendment has been filed after the final Official Action.

### SUMMARY OF INVENTION

The present invention pertains to an image forming system have an image forming apparatus and a terminal device(s), such as a personal computer(s), connected to a network. Such an arrangement can provide a cost advantage due to the fact that multiple users can jointly use the same image forming apparatus (e.g., a printer).

In this type of setup, first a print request and a sequence of print data are sent from the terminal device(s) to the printer via the network. The printer receives these signals, stores the print data temporarily in an image memory, then performs printing based on the print data. When an inexpensive volatile memory is used for the image memory, the problem of losing received print job data when the power to the printer goes out occurs. To eliminate this problem, a non-volatile memory can be used in the printer to back up received print job data. However, a large-capacity non-volatile memory is necessary to store all of the received print job data, which significantly increases the cost of the printer.

Consequently, the present invention includes a non-volatile memory that stores print job processing status information of a plurality of jobs, a determining means that determines, when the image forming apparatus has been restored to its normal state, whether there are any print jobs remaining to be printed based on the print job processing status information stored in the non-

volatile memory, and a resend requesting issuing means that requests a terminal device that sent data of an outstanding print job to resend the data when it is determined that an outstanding print job exists.

Claim 1 is presented below with elements read on the drawing figures, as required in MPEP 1206.

An image forming apparatus (1 Fig. 1, 1A, 2B Fig. 2 and communications controller 10 Fig. 3; page 8, lines 1-5 and page 11, lines 12-25) that performs printing based on data sent from an external terminal device via a network, (2A, 2B...2N and LAN Fig. 2; page 11, lines 12-25 ) comprising:

a non-volatile memory (105 Fig. 3; page 12, lines 20-23) which stores print job processing status information of a plurality of print jobs;

determining means for determining, when the image forming apparatus has been restored to a normal state, whether any of the plurality of print jobs remain to be printed based on the print job processing status information stored in the non-volatile memory (S1, S2, S3 Fig. 6; page 16, line 24 to page 18, line 23); and

resend request issuing means for requesting a terminal device that sent data of a respective print job to resend the data for each of the plurality of prints jobs that it is determined remains to be printed (S4 Fig. 6; page 18, line 24 to page 19, line 22).

### ISSUES

Whether claims 1-6, 9-13, 15 and 16 are unpatentable over Tamagaki (USPN 5,716,148 issued February 10, 1998) in view of Bender [et al.] (USPN 5,791,790 issued August 11, 1998).

### GROUPING OF CLAIMS

The rejected claims have been grouped together in the rejections. The patentability of the rejected claims 1-6, 9-13 and 15 stand or fall together as each of independent claims 1, 9, 13 and 15 encompass similar recitations and which are directed to issues set forth in more detail *infra*. Claim 16 is separately patentable for reasons set forth in more detail *infra*, also.

### THE REJECTION

Claims 1-6, 9-13, 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tamagaki in view of Bender [et al.]. The Examiner admits that Tamagaki does not teach a non-volatile memory which stores processing status information of print jobs, but contends that Bender [et al.] teach a non-volatile memory which stores processing status information of print jobs, referring to column 4, lines 61-67. Thus, the Examiner maintains that "It would have been obvious to have modified the system of Tamagaki for storing processing status information of print jobs by a non-volatile memory as taught by Bender. The suggestion of modifying the system of Tamagaki can be reasoned by one of ordinary skill in the art as set forth by Bender because Bender provides a printer [that] easily keeps track and inspects the status of the uncompleted printing data in a non-volatile memory after the power is restored and continues to print the job."

### ARGUMENT

I. Appellants submit that Bender [et al.] teach away from the present invention and the arrangement of Tamagaki. More specifically, Bender [et al.] teach that a (preferred) printer stores all the print job data in a "non-volatile memory" so that when power is lost before a particular print job has been entirely printed, this fully buffered print job will remain in the non-volatile memory indefinitely until the power is restored. No other use of a non-volatile memory

is disclosed or suggested in Bender [et al.]. Such use of a non-volatile memory is similar to that discuss above in the Summary Of Invention, and requires a large-capacity non-volatile memory to store the printing data, which is not required by the present invention. If a non-volatile memory is used in the manner disclosed in Bender [et al.], there will be no problem of printing data being lost as the non-volatile memory does not lose printing data when power is lost and thus, there is no need to issue a resend request to the host computer(s) that sent the printing data.

The Examiner has asserted that “the advantage of Bender’s system clearly discloses the non-volatile memory does not only store print jobs but also stores information of those print jobs. This advantage of Bender’s system does not need to waste time in order to request for resending other print jobs because these print jobs and all print job data are not lost if the power is lost” (last paragraph of page 6 of the final Official Action of July 30, 2001). After fully recognizing what is actually taught in Bender [et al.], the Examiner subsequently contends that, “Since Bender’s the non-volatile memory stores the status information of these print jobs, this feature can modify to the deficiency of Tamagaki’s system” (last paragraph bridging pages 6 and 7 of the final Official Action of July 30, 2001).

However, such contention is clearly based upon improper hindsight reconstruction of the claimed invention, as Bender [et al.] specifically disclose that the “non-volatile memory” stores all the print job data, not just a part of it. Given such disclosure, a person of ordinary skill in the art would use the non-volatile memory of Bender [et al.] in the manner in which Bender [et al.] teach to used it; i.e., to store all the print job data. Therefore, if the arrangement of Tamagaki were modified in view of the teaching of Bender [et al.], Tamagaki would be modified to provide a non-volatile memory to receive all the print job data, negating the need for a resend request to be sent after power is restored since none of the data will be lost as a result of power to the printer being interrupted.

It is imperative for the decision maker to place himself back in time to when the invention was unknown, i.e., without the Appellants' disclosure at his side, and determine, in light of all the objective evidence bearing on the issue of obviousness, whether one having ordinary skill in the art would have found the claimed invention as a whole obvious under 35 U.S.C. 103. *Panduit v. Dennison Mfg. Co.*, 774 F.2 1082, 227 USPQ 337 (Fed. Cir. 1985), vacated, 475 U.S. 809, 229 USPQ 478 (1986), aff'd. on remand, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir. 1987).

It should be recognized that the fact that the prior art could be modified so as to result in the combination defined by the claims at bar would not have made the modification obvious unless the prior art suggests the desirability of the modification. *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986).

Recognizing, after the fact, that [such] a modification would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. *In re Warner*, 379 F.2d 1011, 154, USPQ 173 (CCPA 1967).

It is impermissible simply to engage in hindsight reconstruction of the claimed invention, using Appellants' structure as a template and selecting elements from references to fill in the gaps. *In re Gorman*, 18 USPQ2d 1885 (Fed. Cir. 1991).

Clearly, the Examiner's rejection to use the non-volatile memory of Bender [et al.] to store only a part of the information that the reference teaches to store is an example of the Examiner using the present disclosure as a template and then selecting elements/features from Bender [et al.] to fill in gaps in Tamagaki. Since both Bender [et al.] and Tamagaki are analogous art, a person of ordinary skill in the art realistically would use the non-volatile memory of Bender [et al.] in the manner taught in the reference; i.e., to store all the print job

data, the problem that the present invention addresses. Thus, unless the Examiner can identify a portion in Bender [et al.] that discloses or suggests that such non-volatile memory need only store status information, the Examiner suggestion to use it in such manner clearly evinces reliance upon improper hindsight considerations to reject the claims.

As recited in claim 16, a controller, when power is restored to the volatile memory after being interrupted and the determining means determines that there are any print jobs that have not been printed, **clears the respective image data address in the non-volatile memory prior to the image data being resent** by the corresponding terminal device. The Examiner asserts that "Tamagaki teaches the backup memory just only stores the information of the print data when the print data is lost due to some error of the printer including the lost power. Therefore, the information of the lost print data would be inherently deleted from the memory because the printer does not need that information anymore when it performs printing with that resend print job. Also, Bender do the same concept that the printer deletes the information of print jobs from the non-volatile memory once the print job has been verified as having been completely printed, because the printer of Bender does not need that information when the print jobs are printed" (first full paragraph of page 7 of the final Official Action of July 30, 2001).

However, the Examiner is clearly disregarding the limitation that the respective image data address in the non-volatile memory is cleared prior to the image data being resent. While the Examiner contends that it is inherent in Tamagaki that the information of the lost print data would be deleted from the memory because the printer does not need that information anymore when it performs printing with that resend print job, he has not established that such the information of the lost print data would be deleted prior to the image data being resent. Furthermore, that an arrangement/element of a reference "inherently" functions/operates in a specific manner is established only when there is **no other** possible manner in which the arrangement/element could function/operate. Since it is possible that the information of the lost

print data could be deleted from the memory after the image data is resent, inherency is not established; e.g., the data in memory is rewritten into the memory after the image data is resent.

As to Bender [et al.], the relevance of the Examiner's assertion that the information of print jobs is deleted from the non-volatile memory once the print job has been **verified as having been completely printed** is unclear with respect to information of print jobs that have not been printed for which image data is resent for printing. More specifically, Bender [et al.] teaching the deleting of information of fully printed print jobs from the non-volatile memory teaches nothing as to clearing the respective image data address in the non-volatile memory (of any print jobs that have not been printed) prior to the image data being resent by the corresponding terminal device.

Thus, neither Tamagaki nor Bender [et al.] disclose or suggest such a controller for clearing a respective image data address in the non-volatile memory prior to the image data being resent by the corresponding terminal device.

II. In addition to the above reasons why the present claims are patentable over Tamagaki and Bender [et al.], Appellants wish to note that the present invention is characterized by “a determining means for *determining ... whether any of the plurality of print jobs remain to be printed*” and “resend request issuing means for *requesting the terminal device that sent data of a respective print job to resend the data for each of the plurality of print jobs that it is determined remains to be printed*”.

In Tamagaki, a request for resending the print data includes only the information on pages to be resent (See Fig. 11 S78, Fig. 13 S104). Thus, Tamagaki discloses a resend request *only to resend the data of one job*. Consequently, Tamagaki does not disclose or suggest the “determining means” and the “resend request issuing means” recited in claim 1. Bender [et al.] also does not disclose the “resend request issuing means” of claim 1. Independent claims 9, 13, 15 and 16 have elements or steps that are similar to those recited in claim 1.



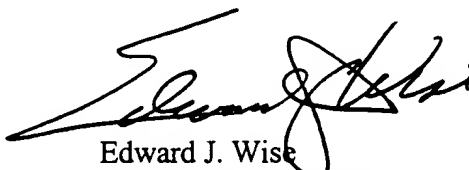
### CONCLUSION

For the reasons advanced above, Appellants respectfully urge that rejection of claims 1-6, 9-13, 15 and 16 as being obvious under 35 USC § 103 is improper as the Examiner has not met his burden of establishing a *prima facie* case of obviousness. Reversal of the rejection of claims 1-6, 9-13, 15 and 16 in this appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account      and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT, WILL & EMERY



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## APPENDIX

1. (Amended) An image forming apparatus that performs printing based on data sent from an external terminal device via a network, comprising:

a non-volatile memory which stores print job processing status information of a plurality of print jobs;

determining means for determining, when the image forming apparatus has been restored to a normal state, whether any of the plurality of print jobs remain to be printed based on the print job processing status information stored in the non-volatile memory; and

resend request issuing means for requesting a terminal device that sent data of a respective print job to resend the data for each of the plurality of prints jobs that it is determined remains to be printed.

2. An image forming apparatus as claimed in Claim 1,

wherein said restoration in the determining means is a power restoration after a shutdown.

3. An image forming apparatus as claimed in Claim 1, further comprising:

job identification information supply means for providing job identification information to each print job data sent from the external terminal device.

4. An image forming apparatus as claimed in Claim 3,

wherein said resend request issuing means requests to resend the data based on the job identification information on the outstanding print job.

5. An image forming apparatus as claimed in Claim 3,

wherein said non-volatile memory stores the job identification information with a terminal device identifier which send data of the job.

6. An image forming apparatus as claimed in Claim 1,

wherein said data includes an information of print request and a print data.

9. (Amended) An image forming system in which an image forming apparatus and a terminal device are connected via a network and the image forming apparatus executes printing based on data sent from the terminal device, comprising:

said image forming apparatus including,

a non-volatile memory which stores print job processing status information of a plurality of print jobs,

determining means for determining, when the image forming apparatus has been restored to a normal state, whether or not any of the plurality of print jobs remain to be printed based on the print job processing status information stored in the non-volatile memory, and

transmitting means for sending resend request information to request the terminal device that sent print data of a respective print job to resend the print data for each of the plurality of print jobs that is determined remains to be printed; and

said terminal device including,

receiving means for receiving the resend request information sent from the image forming apparatus, and

data resend means for resending said data in response to the receipt of said resend request information.

10. An image forming system as claimed in Claim 9,

wherein said restoration in the determining means is a power restoration after a shutdown.

11. An image forming system as claimed in Claim 9, said image forming apparatus further comprising:

job identification information supply means for providing job identification information to each print job data sent from the external terminal device.

12. A image forming system as claimed in Claim 11,

wherein said receiving means receives a job identification information with the resent request, and said data resend means resend the data corresponding to the job identification information.

13. (Amended) A print resume method for an image forming apparatus to perform printing based on data sent from an external terminal device connected to it via a network, comprising the steps of:

storing print job processing status information for a plurality of print jobs in a non-volatile memory;

determining, when the image forming apparatus has been restored to a normal state, whether or not any of the plurality of print jobs remain to be printed based on the processing status information stored in the non-volatile memory;

requesting the terminal device that sent a respective print job data to resend the data for each of the plurality of prints jobs that it is determined remains to be printed; and

resuming printing based on the resent data sent from the terminal device.

15. (Amended) A print data transmission method for an image forming system in which an image forming apparatus and a terminal device are connected via a network, and printing is performed by said image forming apparatus based on print data sent from said terminal device, comprising the steps of:

said image forming apparatus performing steps including,  
storing print job processing status information of a plurality of print jobs in a non-volatile memory,

determining, when the image forming apparatus has been restored to a normal state, whether or not any of the plurality of print jobs remain to be printed based on the print job processing status information stored in the non-volatile memory, and

sending resend request information requesting that the terminal device that sent print job data of a respective print job to resend the print job data for each of the plurality of print jobs that is determined remains to be printed; and

said terminal device performing steps including,

receiving the print data resend request information sent from the image forming apparatus, and

resending said data in response to the receipt of said resend request information.

16. An image forming apparatus that performs printing based on data sent from an external terminal device via a network, comprising:

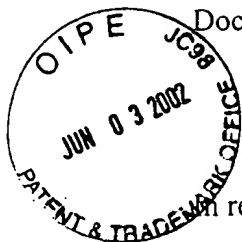
a non-volatile memory which stores printing processing information of a plurality of print jobs, the printing processing information for each print job including job identification, image data address, and job status indicating whether or not a print job has been printed;

a volatile memory which stores image data corresponding to each print job at the image data address specified by said non-volatile memory, said volatile memory subject to loss of all data when power is not supplied thereto;

determining means for determining when supply of power to the volatile memory has been interrupted, and when power has been restored to said volatile memory, determining whether there are any print jobs that have not been printed based on the job status information stored in the non-volatile memory;

resend request issuing means for requesting the terminal device that sent the image data of any print job that has not been printed to resend the image data for storing in the volatile memory; and

a controller which, when power is restored to said volatile memory after being interrupted and the determining means determines that there are any print jobs that have not been printed, clears the respective image data address in the non-volatile memory prior to the image data being resent by the corresponding terminal device.



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TRANSMITTAL OF APPEAL BRIEF

Commissioner for Patents  
Washington, DC 20231

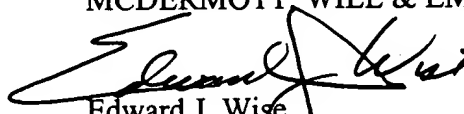
Sir:

Submitted herewith in triplicate is Appellant(s) Appeal Brief in support of the Notice of Appeal filed January 16, 2002. Please charge the Appeal Brief fee of \$320.00 to Deposit Account 500417.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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